

REMARKS

Entry and consideration of the following amendments and remarks is respectfully requested.

Status of the Claims

Claims 8-13 and 16-19 are pending in this application.

Claims 1-7 and 14-15 were canceled without prejudice.

New claims 16-19 were added to further highlight the features of the claimed invention that are not present in the cited prior art. New claims 16-19 are based on the subject matter of original claims 1-4. Thus, it is submitted that no new matter has been added and that claims 16-19 do not present any new issues.

Claims 1-4 and 8-15 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Turner et al. in view of Egelhof et al. and further in view of Huovila et al..

Claims 5-7 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Turner et al. in view of Egelhof et al. view of Huovila et al. and further in view of Grossmann et al..

Claim Rejections Under 35 U.S.C. §103(a)

Claims 1-4 and 8-15 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Turner et al. in view of Egelhof et al. and further in view of Huovila et al.. Claims 5-7 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Turner et al. in view of Egelhof et al. and further in view of Huovila et al. and further in view of Grossmann et al.. The Examiner's rejections are respectfully traversed.

Applicant has canceled claims 1-7, thus the Examiners rejection of claims 5-7 under 35 U.S.C. §103 (a) as being unpatentable over Turner et al. in view of Egelhof et al. and further in view of Huovila et al. and further in view of Grossmann et al. is now moot.

The present invention is drawn to an method and apparatus for producing for producing a board in which two or more webs are combined to form the board. In the method, a common stock flow is divided into a plurality of component stock flows. Then, additives are added to a selected one of the component stock flows. Specifically, the additives are added to a selected stock flow that will later form a layer of a first web that will placed in face to face abutment with a face of second web. The additives increase fines content to thereby promote bonding between the two webs. The above described method/apparatus permits the formation of a multi-layer board in which the various layers securely adhere to one another. Moreover, the method/apparatus permits such board to be produced at speeds higher than 1000 meters per minute. This feature is specifically recited in claims.

When producing a multi-ply board at high running speeds, it is difficult to obtain an adequate ply bond between the individually formed plies of the multi-ply web. In the past, spraying starch has sometimes been used to solve this problem. However, this practice it expensive and not always desired by the board manufacturer. The inventors have found that this problem can be solved by feeding additives to a specific layer of a web. The additives are chosen so that they are able to increase the bond strength between the different plies of the multi-ply web. For example, in the present invention the additives are fed to a component stock flow that after the headbox will form a face of the web that comes into contact with and is combined with the face of another web formed in another web forming unit. Thus, the claimed invention is able

to produce an adequate ply bond between the individually formed web plies when they are combined to form a multi-ply board web when the speed of the board machine is *higher than 1000 meters per minute*.

Turner et al. discusses a multi-ply web former in which water is removed from a web in such a way that a higher fines concentration remains in the upper surface of the web which is then adhered to another web and thus the ply bond between the faces is improved. However, Turner et al. does not disclose feeding specific additives to a specific stock flow that is fed into a multi-layer headbox in order to increase the fines content on the face of the web that will be combined with another web as recited in claims. Nor does Turner et al. teach adding the admixtures at at least one of a point before a pump, a point after the pump, and a point after a machine screen as recited in claim 16 of the present invention.

In addition, Turner et al. fails to anticipate or teach the steps as recited in independent claim 8. Turner does not disclose dividing a flow of fresh stock in to at least two component stock flows, adding an admixture to a selected one of the at least two component stock flows and passing the at least two component flows into a multi-layer headbox as recited in the claimed invention. Moreover, as discussed below, Turner et al. does not disclose a method or apparatus that can be used at speeds higher than 1000 meters/min. as recited in claim 8.

Although the former of Turner et al. can successfully be used at lower speeds it cannot be used at higher speeds of the type recited in the claimed invention because the former disclosed in Turner et al. would remove insufficient amounts of water for higher speed operation. Specifically, Turner et al. uses an efficient dewatering through the first forming wire and a relatively “gentle dewatering” through the second forming wire whereby more fines remain at or

near the face formed against the first forming wire (col. 2, lines 6-39). Although this dewatering technique would remove sufficient water at lower speeds it would remove insufficient water at higher speeds. If the former of Turner et al. was used at higher speeds, e.g. by somehow removing greater amounts of water, fines would also be washed away with the water. Thus, the former in Turner et al. would not be able to retain more fines at or near the face formed against the first forming wire. Therefore, if the former of Turner et al. was used at higher speeds it would not achieve a secure bond between the plies of the board web.

The Examiner also contends that it would have been obvious to a person skilled in the art to use Huovila's multilayer headbox with Turners method of making multiply paper in order to provide a better feed control of admixtures and reduce storage facilities. (Office Action, page 3). However, the claimed invention is silent to such a claimed purpose. As stated above, the present invention relates to application of a layer of admixture on the web former unit of a board machine in which two or more webs are formed by means of separate web former units and then combined with one another to form a multi-layer web. Moreover, the Office Action does not state that it would be obvious to combine Turner et al. with Huovila et al. to attain feeding additives to a specific layer of a web and which additives are chosen so that they are able to increase the bond strength between the different plies of the multi-ply web as in the claimed invention.

Huovila et al. appears to disclose a stock feed system for a multi-layer headbox in which a single stock composition is used which is divided into each layer of the multi-layer headbox and the necessary additives and fillers may be fed separately into each layer. Huovila et al. also shows that different chemicals and fillers may be added to the individual stock flows before

passing them to a multi-layer headbox. However, Huovila et al. does not teach that specific additives should be fed to a specific stock flow in order to obtain a higher fines content on the face of the web that is intended to be combined with another web formed by another web former unit as recited in claims 8 and 16 of the present invention. Thus, a person of ordinary skill in the art would not use Huovila's multilayer headbox with Turner's method of making multiply paper.

Further, even if the headbox of Huovila was combined with the former of Turner et al. as proposed by the Examiner it would still fail to result in the present invention. As discussed above, the former according to Turner et al. does not provide sufficient dewatering capacity and thus restricts its use in practice to speeds under 1000 m/min. Further, it is submitted that there would be no motivation to combine the references as proposed by the Examiner. The former of Turner et al. already provides a technique to increase fine content, thus it would not be obvious to provide an additional structure, i.e. the multilayer headbox of Huovila, to effectuate an increase in the fine content of a selected ply of the web since this is already achieved in the former of Turner et al.

In view of the above, it is submitted that there is no motivation to combine the teachings of Turner et al. with the teachings of Huovila et al. to thereby render the claimed invention obvious. Furthermore, it is also submitted that even if such a combination were made that it would fail to result in the claimed invention.

In view of the amendments to the claims made herein and the arguments presented above it is submitted that the Examiner's rejections have been overcome and should be withdrawn.

A petition for a two-month extension of time with the requisite fee is attached herewith.

In the event that any other fees are required, the Patent and Trademark Office is specifically authorized to charge such fee to Deposit Account No. 50-0518 in the name of Steinberg & Raskin, P.C.

According to currently recommended Patent Office policy, the Examiner is specifically authorized to contact the undersigned in the event that a telephonic interview would advance the prosecution of this application.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

STEINBERG & RASKIN, P.C.

Dated: March 24, 2003

A handwritten signature in black ink, appearing to read "Paul J. Higgins", is written over a horizontal line. The signature is stylized with a large, circular loop at the beginning.

Paul J. Higgins
Reg. No. 44,152

STEINBERG & RASKIN, P.C.
1140 Avenue of the Americas
New York, N.Y. 10036
(212) 768-3800